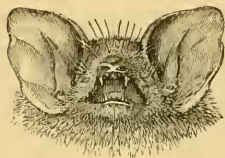


notch above the external basal lobule described in that species, as shown in the woodcut. Distribution of fur as in *K. papuensis*\*, there being short shining yellowish hairs thickly set along the forearm, on the thumb quite to the claw, all along the second finger, on both phalanges of the third, and on the distal phalanges of the fourth and fifth fingers. There are also a few hairs on the proximal end of the fifth metacarpal. The tail and the hind limbs quite to the bases of the claws are covered with similar hairs; the edge of the interfemoral, however, is without a fringe. The teeth are quite similar to those of *K. papuensis*.



*K. javana* is thus intermediate between *K. Jagori*, a Philippine species, and *K. papuensis* from New Guinea, differing from the latter in the shape of the ears and tragus, and by the absence of an interfemoral fringe, and from the former by the presence of fur upon the limbs, that species having these quite naked†. It differs from both, however, in the tricolor character of the fur, as they are of a nearly uniformly dark reddish-brown colour, though the tips of the hairs are lighter.

Measurements of the type, an adult female in spirit:—Length, head and body 1''·93, tail 1''·72, head 0''·78, ear 0''·6, tragus 0''·37, forearm 1''·53, thumb 0''·27, third finger 3''·0, fifth finger 2''·2, tibia 0''·72, foot 0''·35.

XLIII.—*Notes on the Gasteropoda contained in the Gilbertson Collection, British Museum, and figured in Phillips's 'Geology of Yorkshire.'* By R. ETHERIDGE, Jun., F.R.Ph.S.Ed.

IN the 'Geological Magazine' for April 1879 (no. 178) I gave a few brief notes on the Bivalves contained in Gilbertson's collection of Carboniferous-Limestone fossils in the British Museum, and the majority of which were made the subject of illustration in the second volume of Phillips's work, 'Illustrations of the Geology of Yorkshire,' part 2, "The Mountain-Limestone District."

I now purpose following up this subject by an examination of the Gasteropoda, and in the present communication shall

\* Dobson, *tom. cit.* p. 339.

† Cf. Dobson, *tom. cit.* p. 332.

pass in review those species represented on pl. xiii. of the above work. Notes on the specimens of *Gasteropoda* illustrated by pls. xiv.-xvi. will be given in subsequent communications.

THE SPECIES FIGURED ON PLATE XIII. OF VOL. II., 'GEOLOGY OF YORKSHIRE,' BY JOHN PHILLIPS, F.R.S., F.G.S.

1. *Euomphalus pentangulatus*, Sowerby (Phillips, p. 225, t. 13. fig. 13).

This, by far the handsomest species of the genus *Euomphalus*, is well represented in Gilbertson's collection. The section figured in the above plate exemplifies in a particularly well-marked manner the peculiar septation and division into chambers which takes place in the older whorls of this species. With the view of studying this subject more fully, I have had a number of sections of various species made, and hope to speak on this subject at some future date. *E. pentangulatus* has been described in detail by Profs. de Koninck and M'Coy, and need not be again redefined. From *E. catillus* the present species is distinguished by its more convex back, more prominent whorls on the non-umbilicated sides, and by the *very* much less marked character of the ridge bounding the umbilicus as compared with that on the upperside of the shell. The manifest dissimilarity to *E. calyx* is at once apparent. I quite agree with Prof. M'Coy in considering the form established by Col. Portlock as *E. Bronni* only a variety of *E. pentangulatus*, in which the spire is elevated to a more or less greater degree above the keeled edge of the last whorl. The Gilbertson collection contains specimens of this variety. The present species is the

*E. pentangulatus*, J. Sowerby, Min. Conch. 1814, i. p. 97, t. 45 (2 upper figures).

*Skenæa perangulatus*, Fleming, Brit. Animals, 1828, p. 314.

*E. pentangulatus*, Bronn, Lethæa Geogn. 1835, i. p. 94, t. 2. fig. 2, a, b.

*E. pentangulatus*, Phillips (as above).

*Schizostoma catillus*, Fischer, Oryct. Gouv. Moscou, 1837, p. 129, t. 49. figs. 3, 4.

*E. Bronni*, Portlock, Geol. Rep. Londond. 1843, p. 417.

*E. quinquangulatus*, Goldfuss, Petref. Germ. pt. 3, p. 87, t. 191. fig. 3, a-c.

*E. pentangulatus*, M'Coy, Synop. Carb. Limest. Foss. 1844, p. 37; Bronn, Index Pal. Nomen. 1848, p. 480; Brown, Foss. Conchol. 1849, p. 81, t. 42. figs. 28, 29; M'Coy, Brit. Pal. Foss. 1853, fasc. 3, p. 540; Morris, Cat. Brit. Foss. 1854, ed. 2, p. 248.

*E. quinquangulatus*, Eichwald, Lethæa Rossica, 1860, i. pt. 2, p. 1153.

*E. pentangulatus*, Römer, Lethæa Geogn. Atlas, 1876, t. 45. fig. 10, a-c.

2. *Euomphalus catillus*, Martin (Phill. p. 225, t. 13. figs. 1, 2).

The figure is drawn from a much fractured example, the breaks not being shown in the figures. The leading character of this species is the equally angulated ridge on each side of the back; at least it is said by most writers to be equal, although that on the lower or non-umbilicate side is usually somewhat sharper than the other, which has a tendency to become a little rounded like a marginal cord. The points of difference between this shell, *E. calyx*, and *E. pentangulatus* respectively have been well expressed by M'Coy. The section is quadrate, the back being the longest of the four sides. It is the

*Helicites catillus*, Martin, Petr. Derb. 1809, t. 7. figs. 1, 2.

*Euomphalus catillus*, J. Sow. Min. Conch. 1814, i. p. 98, t. 45. figs. 3, 4; Phillips, loc. cit.; De Koninck, Animaux Foss. p. 427, t. 24. fig. 10, a, b; Goldfuss, Petr. Germ. pt. 3, p. 87, t. 191. fig. 6, a-d.

*Straparollus? catillus*, M'Coy, Brit. Pal. Foss. 1853, fasc. 3, p. 538.

*Euomphalus catillus*, Morris, Cat. Brit. Foss. ed. 2, 1854, p. 247; Eichwald, Lethæa Rossica, 1860, ii. p. 1153; De Koninck, Mon. Foss. Carb. Bleiberg, 1873, p. 103, t. 4. fig. 4.

3. *Euomphalus calyx*, Phillips (p. 225, t. 13. fig. 3).

The umbilicus in this shell is not so definitely shown as represented in the figure; it is more or less obscured by matrix, whilst the opposite side of the specimen is wholly imbedded in the limestone. Prof. de Koninck\* is quite in error in referring this species to *E. catillus*, Phill.; it is in no way a cast "of the spire of a specimen of *E. catillus*," the true shelly matter being retained over the whole of the specimen. The figures and descriptions of J. de C. Sowerby and Prof. M'Coy are quite conclusive on this point. The aperture is here more nearly triangular than in the last species, although it is decidedly four-sided. It is the

*Euomphalus calyx*, Phillips, loc. cit.; J. de C. Sow. Min. Conch. 1844, vii. p. 47, t. 633. figs. 8-10; Brown, Foss. Conch. 1849, p. 81, t. 42. fig. 23.

*Euomphalus tabulatus*, De Koninck, Animaux Foss. p. 429, t. 24. fig. 11.

*Straparollus? calyx*, M'Coy, Brit. Pal. Foss. 1853, fasc. 3, p. 537.

*Euomphalus calyx*, Morris, Cat. Brit. Foss. 1854, ed. 2, p. 247.

4. *Euomphalus bifrons*, Phillips (p. 225, t. 13. fig. 4).

The Gilbertson collection contains three very well-marked examples of this shell. Phillips describes his species as with "whorls carinato-tuberculated above, obtusely angulated or

\* Animaux Fossiles, p. 428.

rounded below." There can, however, be no possible doubt that these examples, including the figured specimen, had tubercles on the lower side, as on the upper; these can even now be indistinctly traced by the naked eye, but are more distinctly perceptible to the touch on passing the finger round the edge of the large whorl. This fact was noticed by Mr. J. de C. Sowerby, who, writing some few years later than Prof. Phillips, says, in describing *E. pugilis*, "the tubercles beneath are sometimes very slightly prominent or irregular, when it approaches to *E. bifrons*, Phill. . . . and is probably a variety of it" \*. Later on Mr. Sowerby united the two forms under the name of *E. pugilis*, var. *bifrons* †. The shell figured by Phillips also served Mr. J. de C. Sowerby as his type; he expressly states that his illustration was taken from an example in the Gilbertson collection; and an inspection of the shells confirms this statement. I suspect this example has met with an accident since it was figured by Messrs. Phillips and Sowerby. It is in five pieces, no indication of which is shown on Mr. Sowerby's illustration; had such fractures existed they would have been shown, so very faithfully were all the representations throughout the 'Mineral Conchology,' as a rule, executed. The union of *E. bifrons* with *E. pugilis* was made by Prof. de Koninck, at much about the same time ‡ as proposed by Mr. J. de C. Sowerby; and in this they have been followed by Prof. M'Coy, who likewise drew attention to the resemblance of *E. tuberculatus*, De Kon. Notwithstanding the more elevated spire of this, I think it very probably only a variety of *E. bifrons* or *E. pugilis*, whichever name may be adopted. It is the

*Euomphalus bifrons*, Phillips, loc. cit.

*E. pugilis*, Phillips, tom. cit. p. 225; J. de C. Sow. Min. Conch. 1841, vii. p. 22, t. 621. figs. 2-4; var. *bifrons*, id. op. cit. 1844, p. 48, t. 633. fig. 2; De Koninck, Animaux Foss. p. 422, t. 25. fig. 4, a-c.

*E. pugilis* et *bifrons*, Goldfuss, Petr. Germ. pt. 3, p. 85, t. 190. figs. 4, a, b, and 5, a-c.

*Straparollus pugilis*, M'Coy, Brit. Pal. Foss. 1853, fasc. 3, p. 541.

*Euomphalus pugilis*, Morris, Cat. Brit. Foss. 1854, p. 248.

##### 5. *Euomphalus pugilis*, Phillips (p. 225, not figured).

The Gilbertson collection contains two specimens of this variety of the foregoing species; neither of them, however, is that figured by Mr. J. de C. Sowerby §, nor can I find any specimen in the "Sowerby collection" corresponding with the figures in question.

\* Min. Conch. vii. p. 22.

† Ibid. p. 48.

‡ Animaux Fossiles, p. 422.

§ Min. Conch. vii. t. 621. figs. 2-4.

6. *Euomphalus cristatus*, Phillips (p. 225, t. 13. fig. 5).

This fine specimen was made the subject of a distinct genus, at a somewhat later date, by Mr. J. de C. Sowerby, under the name of *Phanerotinus*. Its characters, as compared with *Euomphalus* generally, are so anomalous that it could scarcely be retained in the latter with propriety. I therefore agree with Prof. Morris in the retention of the name for this species at least. The shell was of considerable thickness, and with its shelly outgrowths must have presented a handsome appearance. It is the

*Euomphalus cristatus*, Phill. loc. cit.

*Phanerotinus cristatus*, J. de C. Sow. Min. Conch. 1843, vii. p. 29, t. 624. figs. 1, 2; Morris, Cat. Brit. Foss. 1854, ed. 2, p. 267.

*Eccyliomphalus cristatus*, M'Coy, Brit. Pal. Foss. 1853, fasc. 3, p. 542.

7. *Cirrus acutus*, J. Sowerby (Phillips, p. 225, t. 13. fig. 12).

As represented by Phillips the figured specimen is only a portion of a larger one; the position, however, in which it is placed is rather misleading. I cannot for a single moment agree with Prof. de Koninck in his statement that with the exception of the height of the spire this species has nearly all the characters of *E. pentangulatus*. In the first place, *Cirrus acutus* possesses no angulation on the underside of the body-whorl, which is a well-marked feature in *E. pentangulatus*; secondly, in the former the portion of the shell above the angulation of the body-whorl, on the upper surface, is flat or concavely bent upwards, whilst in the latter species the corresponding portion of the body or last-formed whorl is concave inwards and downwards. Now, if fragments of these shells are met with, these features would give to them a very great and marked difference. Further, this is repeated in each whorl of *E. pentangulatus*, making it therefore constant; whereas in *Cirrus acutus* the angularity of the body-whorl is quite lost in the upper ones, they becoming simply rounded. On the other hand, I think it more than probable that Prof. de Koninck is correct in regarding Phillips's *Cirrus pentagonalis* as only the young form of *C. acutus*. A much nearer relative of the latter than *E. pentangulatus* is *C. tabulatus*, Phillips, as pointed out by Prof. M'Coy, especially in the young state of the last named, although the whorls in *C. acutus* have not the depressed, truncated, and markedly rectangular appearance of *C. tabulatus*, which will at once separate the two. It is the

*Cirrus acutus*, J. Sow. Min. Conch. 1816, ii. p. 43, t. 141. fig. 1 (2 figs.).

*Cirrus acutus*, Phillips, loc. cit.

*Cirrus pentagonalis*, id. ibid. p. 226, t. 13. fig. 8.



*Euomphalus acutus*, De Koninck, Animaux Foss. p. 433, t. 24. fig. 7, a, b.

*Straparollus acutus*, M'Coy, Brit. Pal. Foss. 1853, fasc. 3, p. 537.

*Euomphalus acutus*, &c., Morris, Cat. Brit. Foss. ed. 2, 1854, p. 247.

*Cirrus tabulatus*, J. de C. Sow. Min. Conch. 1844, vii. p. 65, t. 638. fig. 2 (excl. figs. 3, 4).

### 8. *Cirrus tabulatus*, Phillips (p. 225, t. 13. fig. 7).

This figure is an improvement on the original, which is not quite so mathematically precise as the illustration represents it. It is, further, a small example of *C. tabulatus*, which at times grows to a very large size. Prof. M'Coy's remarks on this species are very much to the point; and he refers with great distinctness to the chief character, next to its tabulate whorls, viz. the truncation of the spire. I quite agree with M'Coy as to the resemblance borne by *C. tabulatus* to the variety of *Euomphalus pentangulatus* with the centre whorls somewhat elevated above, instead of depressed below, the marginal keel of the body-whorl. Under the name of *Euomphalus tabulatus*, Phill., Trautschold has figured\* a shell in no way agreeing with the true characters of the species. It is there represented as a planorbicular biconcave shell (at any rate more or less so), whereas in reality *E. tabulatus* has an elevated spire with large tabulate whorls.

There should be no mistaking this species after the figure of the fine specimen in the Gilbertson collection given by Mr. J. de C. Sowerby. *E. tabulatus* will, I believe, form the European type of Meek's subgenus *Omphalotrochus*. It is the

*Cirrus tabulatus*, Phillips, loc. cit.

*Euomphalus tabulatus*, M'Coy, Synop. Carb. Limest. Foss. 1844, p. 38.

*Straparollus tabulatus*, M'Coy, Brit. Pal. Foss. 1853, fasc. 3, p. 541.

*Cirrus tabulatus*, J. de C. Sow. Min. Conch. 1844, vii. p. 65, t. 638. fig. 1 (excl. figs. 2-4).

### 9. *Cirrus pentagonalis*, Phillips (p. 226, t. 14. fig. 8).

I have already expressed my concurrence with Prof. de Koninck in regarding this as probably the immature form of *C. acutus*. The figured specimen is easily to be recognized by the fracture above the mouth on the body-whorl.

### 10. *Cirrus rotundatus*, J. Sowerby (Phillips, p. 226, t. 13. fig. 15).

With the outward form of *C. acutus*, to a great extent, this species is distinguished, as originally pointed out by Mr. Sowerby, by having the upper part of each whorl rounded

\* Die Kalkbrüche von Mjatschkowa, 1874, pt. i. t. 4. fig. 12, a, b, c.

and not flattened. The spire varies in height, and the body-whorl in relative convexity. *C. rotundatus* of Sowerby has been universally regarded as a synonym of the *Straparollus Dionysii*, De Montf. On the other hand, Prof. M'Coy has to a great extent shown reasons for believing that a gradual passage may be traced between *S. Dionysii*, *Cirrus acutus*, Phill., and *Euomphalus anguis*, M'Coy; but Prof. Morris goes further and places the last-named species as a synonym of *Straparollus* or *Euomphalus Dionysii*, De Montf. The probability, I think, is, that they all three form varieties of an extended species, of which *S. Dionysii*, as the first described, may be taken as the type; it is a point, however, which can only be satisfactorily determined by the placing side by side of a large number of examples of each. It is the

*Straparollus Dionysii*, De Montfort, Conch. Syst. 1810, ii. p. 175, xlv<sup>e</sup> genre.

*Cirrus rotundatus*, J. Sow. Min. Conch. 1823, v. p. 36, t. 429. figs. 1, 2; Phillips, loc. cit.

*Euomphalus rotundatus*, M'Coy, Synop. Carb. Limest. Foss. 1844, p. 37.

*E. anguis*, M'Coy, tom. cit. p. 35, t. 3. fig. 11.

*E. Dionysii*, De Koninck, Animaux Foss. p. 438, t. 24. figs. 1-5, 8; Goldfuss, Petr. Germ. pt. 3, p. 88, t. 191. fig. 7, a-c.

*Straparollus Dionysii*, M'Coy, Brit. Pal. Foss. 1853, fasc. 3, p. 539.

*Euomphalus Dionysii*, Morris, Cat. Brit. Foss. 1854, ed. 2, p. 247.

### 11. *Cirrus pileopsideus*, Phillips (p. 226, t. 13. fig. 6).

There are several examples of this shell in the Gilbertson collection; and it is in many ways a peculiar one: there is one which corresponds more nearly with the figure than any of the others. *C. pileopsideus* is discoid and much depressed, and has, indeed, a very different appearance from any of the other Carboniferous *Euomphali*. The whorls are, as described by M'Coy, somewhat imbricating; and the spire is more frequently than not depressed below the edge of the body-whorl. It is the

*Cirrus pileopsideus*, Phillips, loc. cit.

*Euomphalus clausus*, J. de C. Sow. Min. Conch. 1844, vii. p. 45, t. 633. fig. 1 (3 figs.).

*E. pileopsideus*, M'Coy, Synop. Carb. Foss. 1844, p. 37.

? *E. neglectus*, M'Coy, loc. cit. p. 36, t. 5. fig. 23.

*E. pileopsideus*, De Koninck, Animaux Foss. p. 437, t. 24. figs. 4, 6, a, b.

*Straparollus pileopsideus*, M'Coy, Brit. Pal. Foss. 1853, fasc. 3, p. 540.

*Euomphalus pileopsideus*, Morris, Cat. Brit. Foss. 1854, ed. 2, p. 248.

### 12. *Cirrus spiralis*, Phillips (p. 226, t. 13. fig. 14).

I have not succeeded in finding a specimen which I could satisfactorily consider the figured example, unless it be one

with some matrix attached to it, not shown in the illustration.

This is a bluntly conical species, with a rather expanded base as compared with the height of the spire, the only break in the continuity of the cone being the slightly impressed sutures, there being no shoulder or upper flattened surface to each whorl as in many species of *Euomphalus*. It is a connecting link between *E. Dionysii* and *E. rotundatus*. The base is much flattened, becoming concave, with a by no means large umbilicus; spire short. The surface is ornamented with obliquely sigmoidal, crossed in some specimens by fine spiral lines. Very little appears to have been written concerning this species. It is the

*Cirrus spiralis*, Phillips, loc. cit.; Morris, Cat. Brit. Foss. 1843, p. 142; Brom, Index Pal. Nomen. 1848, p. 302; Brown, Foss. Conchol. 1849, p. 80, t. 41. fig. 18.

The name *Euomphalus spiralis* has been twice applied by Von Münster to shells described in the 'Beiträge'\*; but as one bears date 1840 and the other 1841, neither will clash with Phillips's species, which, whether we call it *Cirrus* or *Euomphalus*, has priority. It appears to me that the two shells so named by Von Münster on different occasions are specifically distinct.

*On the Species named Euomphalus and Cirrus by Phillips.*

The use of the names *Straparollus*, De Montf., *Euomphalus*, Sow., and *Cirrus*, Sow., has been made the subject of much confusion by conchologists and palæontologists. In the following remarks I shall endeavour to distribute the species described by Phillips, appertaining to one or other of these genera or subgenera, whichever term may be used, in their proper and respective sections. With this view it will be necessary to go over, to some extent, the early history of the names in question.

*Straparollus* was established by Denis de Montfort in 1810† for a cirroid shell from the Carboniferous Limestone of Namur, which, he remarked, possessed a large and smooth umbilicus, and an entire and inclined mouth: type *S. Dionysii*, De Montf.

*Euomphalus* was first introduced by James Sowerby in 1814‡ for an involute planorbicular shell with a depressed spire, and concave or largely umbilicate below, the mouth being "mostly angular:" type *E. pentangulatus*, Sow.

\* Beiträge zur Petrefactenkunde &c. Heft 3, 1840, p. 85, t. 15. fig. 8; ibid. Heft 4, 1841, p. 105, t. 11. fig. 2.

† Conchyl. Systém. ii. p. 175, xlii<sup>e</sup> genre. ‡ Min. Conch. i. p. 97.



The same author founded the genus *Cirrus* in 1816\*, and described it as a spiral conical univalve, without a columella, with the volutions united and funnel-shaped beneath; type *C. acutus*, Sow.

In 1837 Dr. Broun† established the genus *Schizostoma* for certain of Sowerby's *Euomphali*, but with the mouth, as he supposed, sinuated and furnished with a band, as in *Pleurotomaria* and *Pleurotoma*: type *Euomphalus catillus*, Sow.

Prof. L. G. de Koninck‡ and Prof. F. M'Coy§, writing almost simultaneously, united the genera *Euomphalus* and *Cirrus* of Sowerby in one genus, under the name *Euomphalus*. The latter of these authors did so "knowing of no character by which to distinguish them; at the same time I am perfectly aware that *Euomphalus*, as it now stands, requires revision." Prof. de Koninck, on the other hand, went a step further than M'Coy, and referred the united *Euomphalus* and *Cirrus* to *Straparollus*, Montf.; however, to show the widely different outward form represented by such shells as *E. pentangulatus*, Sow., and *C. acutus*, Sow., or *S. Dionysii*, De Montf., he subdivided the combined genus into *Euomphali schizostomatoidei* and *E. cirroidei*.

In 1850 D'Orbigny|| united the three genera, adopting for the combination the name first given by Denis de Montfort, *Straparollus*.

The next important contribution to this subject is that by Prof. M'Coy, who, in the second fasciculus of his 'British Palæozoic Fossils', ¶, restricted the name *Euomphalus* to those forms with an entire peritreme, and often thickened, nearly entire circular lip, not indented by the preceding whorl: types *E. rugosus*, Sow., and *E. discors*, Sow. On the other hand, *Cirrus* is abandoned, and the name *Straparollus* used for both those cirroid and planorbicular shells in which the mouth is indented by the preceding whorl.

The last opinion I think necessary to refer to in this matter is that of Messrs. Meek and Worthen\*\*. These remarkably astute palæontologists point out that there is a discrepancy between the figures of *Straparollus Dionysii*, given by De Montfort and De Koninck, in the form of the mouth. On the general question they remark:—"We are aware Prof. M'Coy and some others regard *Euomphalus*, as typified by *E. pentangulatus*, as an exact synonym of *Straparollus*, and

\* Min. Conch. ii. p. 93.

† Lethæa Geogn. i. p. 95.

‡ Descr. Anim. Foss. p. 418.

§ Synop. Carb. Limest. Foss. 1844, p. 34.

|| Prodr. de Pal. i. p. 6.

¶ P. 297.

\*\* Illinois Survey Report, 1866, ii. p. 158.

that he proposes to transfer the former name to another group, consisting of rough *Cirrus*-like shells, of which *E. discors* and *E. rugosus*, Sowerby, are examples (see Brit. Pal. Foss. p. 279). It seems to us, however, that if the name *Euomphalus* is to be retained at all, we should apply it to the forms for which it was originally proposed, and that we have no right to transfer it to another type because Sowerby subsequently in another place refers this other type to his genus *Euomphalus*. If we regard *Straparollus*, Montfort, 1810, and *Euomphalus*, Sowerby, 1815, as exactly synonymous, then the latter name should be dropped from use, except in the synonymy of *Straparollus*, and could not, according to the most generally accepted rules of nomenclature, be transferred to the *E. discors* group, whether we view these shells as constituting a section of the genus *Straparollus*, or as an entirely distinct genus."

Now, notwithstanding the discrepancy in the figures of De Montfort and De Koninck, pointed out by the last-mentioned writers, I think, after investigating the matter thoroughly, there can be little doubt palæontologists have done wisely in uniting *Straparollus*, De Montf., with *Cirrus*, J. Sowerby, and that, in whatever form we look upon this combination in relation to those which follow, whether as a genus, subgenus, or section, the name adopted must certainly be *Straparollus*.

We next have to consider the name *Euomphalus*. By M'Coy the planorbicular shells for which Sowerby instituted the name were merged with the cirroid forms under the one name. Freely admitting that the total want of a columella and the existing large open umbilicus are points which of necessity place these shells in close generic contiguity, I still think that the very great discrepancy in form demands more than mere specific separation. In the present state of conchological science such a difference would be seized upon by workers amongst recent shells. It has been expressed by De Koninck in a sectional sense by using the terms *E. schizostomatoidei* and *E. cirroidei*, whilst Meek and Worthen have not hesitated to adopt *Euomphalus* in a subgeneric sense under *Straparollus* for the same purpose; in so doing I am quite in accord with them. Again, I quite agree with these writers in deprecating the use made of the term *Euomphalus* by Prof. M'Coy in his later work, viz. as a section for those *Euomphali* (typified by *E. discors* and *E. rugosus*) in which the peritreme is quite entire. The name *Euomphalus*, if retained, must, by all laws of nomenclature, be so (as they have pointed out) for those shells typified by *E. pentangulatus*. That Prof. M'Coy is right in retaining the shells in question separate from the *E.*

*pentangulatus* group I am convinced. I merely differ from him as to the nomenclature of this section, which, I think, requires a name for its recognition.

The classification of these *Euomphaloid* shells now advocated will be found expressed in the following table, which will also give the synonymy of each group, and the species which fall into it described by Phillips, with two exceptions.

The shells in question (*Cirrus tabulatus*, Phill., and *Euomphalus cristatus*, Phill.) require a separate notice. The first of these will, I have very little doubt, constitute itself a species of Meek's subgenus *Omphalotrochus*, the resemblance between his type (*O. Whitneyi*) and the fine example of *C. tabulatus* figured by Mr. J. de C. Sowerby being very great.

The second of these shells (*E. cristatus*, Phill.) has been made the subject of a distinct genus by Mr. J. de C. Sowerby, viz. *Phanerotinus*\*, which I propose to retain as such, following in this respect my friend Prof. J. Morris. It most certainly is not a *Euomphalus* simply.

#### Genus STRAPAROLLUS, De Montfort, 1810.

##### Section (a) *Straparollus* (proper), De Montf. 1810.

Type *S. Dionysii*, De Montf.

= *Cirrus*, J. Sow. 1814; *Euomphalus* (pars), Fleming, 1828; *Euomphalus*, M'Coy, 1844; *Euomphali cirroidei*, De Koninck, 1843; *idem*, Bronn, 1848; *Cirrus*, Brown, 1849; *Straparollus* (pars), D'Orbigny, 1850; *Straparollus* (pars), M'Coy, 1853; *Euomphalus* (pars), Eichwald, 1860; *Straparollus*, Meek and Worthen, 1866.

Species described by Phillips:—*Cirrus acutus*, J. Sow.; *C. pentagonalis*, Phill.; *C. rotundatus*, J. Sow. (= *S. Dionysii*, De Montf.); *C. pileopsideus*, Phill.; and *C. spiralis*, Phill.

##### Section (b) *Euomphalus*, J. Sowerby, 1814.

Type *E. pentangulatus*, J. Sow.

= *Bifrontia* (pars), Deshayes, 1824; *Schizostoma*, Bronn, 1837; *Schizostoma* et *Euomphalus*, Fischer, 1837; *Euomphalus* (pars), M'Coy, 1844; *E. schizostomatoidei*, De Koninck, 1843; *idem*, Bronn, 1848; *Straparollus* (pars), D'Orbigny, 1849 and 1850; ? *Discohelix*, Dunker, 1846; *Euomphalus*, Brown, 1849; *Straparollus*, M'Coy, 1853; *Euomphalus*, G. & F. Sandberger, 1850-56; *Euomphalus* (pars), Eichwald, 1860; *Euomphalus*, Meek and Worthen, 1866.

Species described by Phillips:—*Euomphalus pentangulatus*, Sow.; *E. catillus*, Martin; *E. calyx*, Phill.; *E. bifrons*, Phill. (= *E. pugilis*, Phill.).

\* Min. Conch. 1843, vii. p. 29.

## Section (c) (—), M'Coy, 1853.

Types: *E. rugosus*, Sow.; *E. discors*, Sow.

= *Straparollus* (pars), D'Orbigny, 1850; *Euomphalus* (pars), Eichwald, 1860; *E. discors* group, Meek and Worthen, 1866.

Species described by Phillips, none.

Section (d) *Omphalotrochus*, Meek.

Type *O. Whitneyi*, Meek.

= *Euomphalus* (pars), Phillips, 1836; *idem*, J. de C. Sowerby, 1844.

Species described by Phillips—*Cirrus tabulatus*, Phill.

## Genus PHANEROTINUS, J. de C. Sowerby, 1843.

Type *P. cristatus*, Phill.

=? *Ecculiomphalus*, Portlock, 1843; ? *Serpularia*, F. A. Römer, 1843.

Species described by Phillips—*Euomphalus cristatus*, Phill.

Various other generic names have at times been proposed for *Euomphalus*, or for sections of the genus, such as *Omalaxis*, Deshayes, *Bifrontia*, Deshayes\*; but as these are all posterior in date, or otherwise ineligible, I shall not now refer to them.

13. *Turbo tiara*, Sowerby (Phillips, p. 226, t. 13. fig. 9).

This is a fine example of the species, but much decorticated and not in a good state of preservation. The figure is a tolerably good representation. I have compared the Gilbertson specimen with that contained in the "Mineral Conchology Collection." It is the

*Turbo tiara*, Sow. Min. Conch. 1827, v. p. 97, t. 551. fig. 1 (2 figs.); Phillips, *loc. cit.*

*Platyschisma tiara*, M'Coy, Brit. Pal. Foss. 1853, fasc. 3, p. 535; Morris, Cat. Brit. Foss. 1854, ed. 2, p. 269.

*Turbo tiara*, Brown, Foss. Conch. 1849, p. 73, t. 38. fig. 32; Bronn, Index Pal. Nomen. 1848, p. 1326.

14. *Turbo semisulcatus*, Phillips (p. 226, t. 23. fig. 10).

The type specimen of this so-called species is a beautifully preserved little shell; and the figure is good, except that some matrix remaining about the aperture is not represented. I quite agree with Prof. de Koninck in considering this only a variety of the next species, *Turbo biserialis*. The elongated

\* Descr. Coq. Foss. Env. Paris, ii. p. 221.

tubercles on the shell are open to much variability; we have specimens with only one row, some with two, and others with one row on one part of the surface and two on another portion of the same shell. The striæ of growth are strongly marked.

15. *Turbo biserialis*, Phillips (p. 226, t. 13. fig. 11).

There are several examples of this in the Gilbertson collection; and it is difficult to pick out the figured shell. The descriptions by Prof. de Koninck and M'Coy are clear and comprehensive. It is the

*Turbo biserialis* et *T. semisulcatus*, Phillips (as above).

*Littorina biserialis*, De Koninck, Animaux Foss. p. 458, t. 40. fig. 6.

*Turbo biserialis*, Bronn, Index Pal. Nomen. 1848, p. 1318; M'Coy, Brit. Pal. Foss. 1853, fasc. 3, p. 535.

*Turbo biserialis* et *T. semisulcatus*, Morris, Cat. Brit. Foss. 1854, ed. 2, pp. 282, 283.

*On the Shells called Turbo by Phillips.*

*Turbo tiara* has been placed by M'Coy in his genus *Platyschisma*, and has doubtless found an appropriate resting-place there. *T. biserialis* (= *T. semisulcatus*) is in want of a generic receptacle; and for it, in all probability, a name will have to be coined. By De Koninck it was placed in *Littorina*, and by M'Coy doubtfully in the genus under which it was described. By Meek and Worthen\* it has been regarded as forming a section of *Naticopsis*. We shall examine this subject further when we take up the species of that genus in the Gilbertson collection.

[To be continued.]

XLIV.—*New Cerambycidae from Ecuador.*

By CHARLES O. WATERHOUSE.

SINCE my last paper on Coleoptera from Ecuador I have determined three more species of Cerambycidae from among those collected by Mr. Buckley to be new, which I here describe.

In the Prionidæ, the specimens of *Prionacalus Buckleyi*, W., taken by Mr. Buckley differ immensely in size and development, in the same way as is seen in *P. cacticus* and *P. atys*; and the sculpture of the thorax varies also somewhat in all the species. I have seen one small example of *P. Buckleyi*

\* Illinois Geol. Survey Report, ii. p. 364.